

or eight miles in diameter. To the incomplete and misleading records of migration on land Mr. Loomis attributes what he considers to be the false statement that young birds migrate in advance of the adults. His own experience, as given in both this and other papers, would seemingly prove that in this country the contrary was true, and he says: "The mere occurrence of the young in a given locality before the presence of adults has been detected proves nothing beyond the bare fact that the young were observed there earlier than the adults. It does not prove that they left the region of their birth in advance of their parents, any more than the habitual absence in a locality of a species breeding to the northward and wintering to the southward of it, proves that the species does not migrate." Mr. Loomis thus agrees with most American students of migration on this much discussed question of leadership, but on the other hand we have Herr Gätke asserting positively from Heligoland: "1. That under normal conditions in the case of the three hundred and ninety-six species occurring here, with the exception of a single one, the autumn migration is initiated by the young birds, from about six to eight weeks after leaving their nests. 2. That the parents of these young individuals do not follow till one or two months later. . . ."

Beginning on June 16, Mr. Loomis gives a daily record of the movements of birds down the coast, showing the influence of general and local climatic conditions on the numbers of birds and direction of flight. This is followed by a summary and an annotated list of the forty-four species of which specimens were taken. *Brachyramphus hypoleucus* and *Stercorarius longicaudus* are here recorded for the first time from California. Mr. Loomis has selected a comparatively little known field in which to prosecute his studies, and we trust that this valuable and suggestive paper may be followed by many others from his pen. — F. M. C.

Ridgway's Ornithology of Illinois.¹—An extended review of the first volume of this work² sufficiently explains its object and character. The present volume is devoted to the game and water birds, and concludes the 'Descriptive Catalogue.' Some 139 species are included, which, added to the 216 given in the first volume, make the total for the State 355. The occurrence of the following species, however, lacks confirmation: *Lagopus lagopus*, *Ardea rufescens*, *Megalestris skua*, *Stercorarius pomarinus*, *Larus argentatus*, *Nema sabinii*, *Sterna maxima*, and *Urinator arcticus*. Mr. Ridgway's faith in *Ardea zweerdmannii* of the A. O. U.

¹ Natural History Survey of Illinois, | State Laboratory of Natural History, | S. A. Forbes, Director. | The | Ornithology | of Illinois | — | Part I, Descriptive Catalogue, | By Robert Ridgway. | Volume II. | Part 1. | — | Published by authority of the State Legislature. | — | Springfield, Ill. | H. W. Rokker, Printer and Binder. | 1895. Roy. 8vo. pp. 282; pl. xxii.

² Auk, VII, Jan. 1890, pp. 74-77.

'Hypothetical List' is shown by his inclusion of this bird on the basis of an individual "seen on several occasions," by himself near Mt. Carmel. Subtracting these, reduces the total to the neighborhood of 350, a number which, curiously enough, seems to represent the avifauna of those States whose birds have been most thoroughly studied, without regard to their inland or seaboard position.

Ornithologists are to be congratulated on the completion of this work. When Part II (in which we have no doubt Professor Forbes will treat the subject economically as thoroughly as Mr. Ridgway has systematically) appears the inhabitants of Illinois may justly claim to be more enlightened ornithologically than the residents of any other State in the Union.—F. M. C.

The Food Habits of Woodpeckers.—Bulletin No. 7¹ of the Division of Ornithology and Mammalogy, U. S. Department of Agriculture, is devoted to the food habits of North American Woodpeckers. It consists of two papers, the first and principal one being by Prof. F. E. L. Beal, on the 'Food of Woodpeckers' (pp. 7-33), and the other (pp. 35-39 and pll. i-iii) by Mr. F. A. Lucas on the 'Tongues of Woodpeckers,' in their relation to the character of the food.

"The present paper," says Mr. Beal, "is merely a preliminary report, based on the examination of 679 stomachs of Woodpeckers, and representing only 7 species—all from the eastern United States. These species are the Downy Woodpecker (*Dryobates pubescens*), the Hairy Woodpecker (*D. villosus*), the Flicker or Golden-winged Woodpecker (*Colaptes auratus*), the Red-headed Woodpecker (*Melanerpes erythrocephalus*), the Red-bellied Woodpecker (*Melanerpes carolinus*), the Yellow-bellied Woodpecker (*Sphyrapicus varius*), and the Great Pileated Woodpecker (*Ceophlwus pileatus*). Examination of their stomachs shows that the percentage of animal food (consisting almost entirely of insects) is greatest in the Downy, and grades down through the Hairy, Flicker, Pileated, Redhead, and Yellow-bellied to the Red-bellied, which takes the smallest quantity of insects."

The Downy Woodpecker is considered to be the most beneficial, and the Hairy Woodpecker and the Flicker the next so, these three species being considered as among the least harmful of our common birds. The Yellow-bellied Woodpecker is the only species of the seven possessing really harmful qualities, which may, in certain localities, render it detrimental to fruit trees, through its fondness for sap and the inner

¹ Preliminary Report on the Food of Woodpeckers. By F. E. L. Beal, Assistant Ornithologist.—The Tongues of Woodpeckers. By F. A. Lucas, Curator, Department Comparative Anatomy, U. S. National Museum.= Bulletin No. 7, U. S. Department of Agriculture, Division of Ornithology and Mammalogy. Washington: Government Printing Office, 1895. 8vo, pp. 1-44, pll. i-iii, Frontispiece, and 4 cuts in the text.